Appl. No.: 10/656,582

Amdt. dated: January 11, 2006

Amendment under 37 CFR 1.116 Expedited Procedure

Examining Group 2652

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A magnetic head comprising:

a retrieving unit for converting information output from a recording medium into electric signal;

a writing unit having a function of electromagnetic conversion for writing information in said recording medium in response to said electric signal;

a first protective film formed above an end face of an air outlet of a slider mounting the magnetic head for protecting said retrieving unit and said writing unit; and

a second protective film formed above said first protective film,

wherein said first protective film is formed between said second protective film and said writing unit,

wherein said writing unit is formed between said first protective film and said retrieving unit,

wherein the coefficient of linear expansion of said second protective film is smaller in comparison with that of said first protective film.

- 2. (original) A magnetic head as claimed in claim 1, wherein said first protective film is an alumina film, and said second protective film is a film made of an alumina film containing silicon oxide therein.
- 3. (original) A magnetic head as claimed in claim 1, wherein said first protective film is an alumina film, and said second protective film is a film made of mainly carbon or boron.

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4. (original) A magnetic head as claimed in claim 2, wherein said second protective film is a film made of an alumina film containing 5% or more silicon oxide therein.

- 5. (currently amended) A magnetic recording/reading apparatus comprising:
 - 1) a recording medium, which information is recorded or read out from;
 - 2) rotatable device that rotates the recording medium;
- 3) supporting/positioning device that supports the magnetic head, and positions said magnetic head at a desired position on the recording medium;
 - 4) a recording/retrieving circuit for processing information signal; and
 - 5) a magnetic head comprising
- a) a retrieving unit for converting information output from a recording medium into electric signal;
- b) a writing unit having a function of electromagnetic conversion for writing information in said recording medium in response to said electric signal;
- c) a first protective film formed above an end face of an air outlet of a slider mounting the magnetic head for protecting said retrieving unit and said writing unit; and
 - d) a second protective film formed above said first protective film,

wherein the coefficient of linear expansion of said second protective film is smaller in comparison with that of said first protective film,

wherein said first and second protective films are formed in a first direction that intersects with an air bearing surface of the magnetic head.

- 6. (canceled)
- 7. (currently amended) The magnetic head according to claim 1, wherein an end of the second protective film on a side [[of]] near to the recording medium is recessed from a floating surface of the slider.

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- 8. (previously presented) The magnetic head according to claim 1, wherein the end face of the air outlet end of the slider is intersected with a floating surface of the slider facing the recording medium.
- 9. (previously presented) The magnetic head according to claim 8, wherein the end face of the air outlet end of the slider is perpendicular to the floating surface of the slider.
- 10. (previously presented) The magnetic recording/reading apparatus according to claim 5, wherein said first protective film is an alumina film, and said second protective film is a film made of an alumina film containing silicon oxide therein.
- 11. (previously presented) The magnetic recording/reading apparatus according to claim 10, wherein said second protective film is a film made of an alumina film containing 5% or more silicon oxide therein.
- 12. (previously presented) The magnetic recording/reading apparatus according to claim 5, wherein said first protective film is an alumina film, and said second protective film is a film made of mainly carbon or boron.
- 13. (currently amended) The magnetic recording/reading apparatus according to claim 5, wherein an end of the second protective film on a side [[of]] near to the recording medium is recessed from a floating surface of the slider.
- 14. (previously presented) The magnetic recording/reading apparatus according to claim 5, wherein the end face of the air outlet end of the slider is intersected with a floating surface of the slider facing the recording medium.
- 15. (previously presented) The magnetic recording/reading apparatus according to claim 14, wherein the end face of the air outlet end of the slider is perpendicular to the floating surface of the slider.

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16. (previously presented) A magnetic head comprising:

a retrieving unit for converting information output from a recording medium into electric signal;

a writing unit having a function of electromagnetic conversion for writing information in said recording medium in response to said electric signal; and

a first protective film formed on said retrieving unit and said writing unit so as to protect said units;

wherein a second protective film is formed on said first protective film, and the coefficient of linear expansion of said second protective film is smaller in comparison with that of said first protective film; and

wherein said first protective film is an alumina film, and said second protective film is a film made of an alumina film containing silicon oxide therein.

- 17. (previously presented) A magnetic head as claimed in claim 16, wherein said second protective film is a film made of an alumina film containing 5% or more silicon oxide therein.
 - 18. (previously presented) A magnetic head comprising:

a retrieving unit for converting information output from a recording medium into electric signal;

a writing unit having a function of electromagnetic conversion for writing information in said recording medium in response to said electric signal; and

a first protective film formed on said retrieving unit and said writing unit so as to protect said units;

wherein a second protective film is formed on said first protective film, and the coefficient of linear expansion of said second protective film is smaller in comparison with that of said first protective film; and

wherein said first protective film is an alumina film, and said second protective film is a film made of mainly carbon or boron.

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19. (new) A magnetic head comprising:

a retrieving unit for converting information output from a recording medium into electric signal;

a writing unit having a function of electromagnetic conversion for writing information in said recording medium in response to said electric signal;

a first protective film formed above an end face of an air outlet of a slider mounting the magnetic head for protecting said retrieving unit and said writing unit; and

a second protective film formed above said first protective film,

wherein the coefficient of linear expansion of said second protective film is smaller in comparison with that of said first protective film,

wherein an end of the second protective film on a side near to the recording medium is recessed from a floating surface of the slider.

- 20. (new) A magnetic recording/reading apparatus comprising:
- 1) a recording medium, which information is recorded or read out from;
- 2) rotatable device that rotates the recording medium;
- 3) supporting/positioning device that supports the magnetic head, and positions said magnetic head at a desired position on the recording medium;
 - 4) a recording/retrieving circuit for processing information signal; and
 - 5) a magnetic head comprising
- a) a retrieving unit for converting information output from a recording medium into electric signal;
- b) a writing unit having a function of electromagnetic conversion for writing information in said recording medium in response to said electric signal;
- c) a first protective film formed above an end face of an air outlet of a slider mounting the magnetic head for protecting said retrieving unit and said writing unit; and
 - d) a second protective film formed above said first protective film,

wherein the coefficient of linear expansion of said second protective film is smaller in comparison with that of said first protective film,

wherein an end of the second protective film on a side near to the recording medium is recessed from a floating surface of the slider.